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Federal Communications Commission

Approved by OMB

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Section V-B - FM BROADCAST ENGINEERING DATA	FOR COMMISSION USE ONLY File No. _____ ASB Referral Date _____ Referred by _____

Name of Applicant

Sharon A. Mayer

Call letters *(if issued)*	Is this application being filed in response to a window? ☐ Yes ☒ No If Yes, specify closing date: _____

Purpose of Application: *(check appropriate boxes)*

Amend application to

- ☒ Construct a new (main) facility
- ☐ Construct a new auxiliary facility
- ☐ Modify existing construction permit for main facility
- ☐ Modify existing construction permit for auxiliary facility
- ☐ Modify licensed main facility
- ☐ Modify licensed auxiliary facility

If purpose is to modify, indicate below the nature of change(s) and specify the file number(s) of the authorizations affected.

- ☐ Antenna supporting-structure height
- ☐ Effective radiated power
- ☒ Antenna height above average terrain
- ☐ Frequency
- ☒ Antenna location
- ☐ Class
- ☐ Main Studio location
- ☐ Other *(Summarize briefly)*

File Number(s) ARN-911004MG

1. Allocation:

Channel No.	Principal community to be served: City	County	State
271	Milford	Dickinson	IA

Class *(check only one box below)*

☐ A ☐ B1 ☐ B ☐ C3

SECTION V-B – FM BROADCAST ENGINEERING DATA (Page 2)

4. Does the application propose to correct previous site coordinates? ☐ Yes ☒ No
If Yes, list old coordinates.

Latitude ° ' "	Longitude ° ' "

5. Has the FAA been notified of the proposed construction? ☒ Yes ☐ No
If Yes, give date and office where notice was filed and attach as an Exhibit a copy of FAA determination, if available.

Exhibit No. N/A

Date February 26, 1992 Office where filed Central Regional Office

6. List all landing areas within 8 km of antenna site. Specify distance and bearing from structure to nearest point of the nearest runway.

	Landing Area	Distance (km)	Bearing (degrees True)
(a)	Spirit Lake Mun.	4.0	74.7
(b)	Fuller (AP)	5.5	155.9
(c)	Dickinson Co. Mem. Hosp. (HP)	6.7	49.1

7. (a) Elevation: *(to the nearest meter)*

SECTION V-B – FM BROADCAST ENGINEERING DATA (Page 3)

10. Is a directional antenna proposed? ☐ Yes ☒ No

If Yes, attach as an Exhibit a statement with all data specified in 47 C.F.R. Section 73.316, including plot(s) and tabulations of the relative field. Exhibit No. N/A

11. Will the proposed facility satisfy the requirements of 47 C.F.R. Sections 73.315(a) and (b)? ☒ Yes ☐ No

If No, attach as an Exhibit a request for waiver and justification therefor, including amounts and percentages of population and area that will not receive 3.16 mV/m service. Exhibit No. N/A

12. Will the main studio be within the protected 3.16 mV/m field strength contour of this proposal? ☒ Yes ☐ No

If No, attach as an Exhibit justification pursuant to 47 C.F.R. Section 73.1125. Exhibit No. N/A

13. (a) Does the proposed facility satisfy the requirements of 47 C.F.R. Section 73.207? ☒ Yes ☐ No

(b) If the answer to (a) is No, does 47 C.F.R. Section 73.213 apply? N/A ☐ Yes ☐ No

(c) If the answer to (b) is Yes, attach as an Exhibit a justification, including a summary of previous waivers. Exhibit No. N/A

(d) If the answer to (a) is No and the answer to (b) is No, attach as an Exhibit a statement describing the short spacing(s) and how it or they arose. Exhibit No. N/A

(e) If authorization pursuant to 47 C.F.R. Section 73.215 is requested, attach as an Exhibit a complete engineering study to establish the lack of prohibited overlap of contours involving affected stations. The engineering study must include the following: Exhibit No. N/A

(1) Protected and interfering contours, in all directions (360), for the proposed operation.
(2) Protected and interfering contours, over pertinent arcs, of all short-spaced assignments, applications and allotments, including a plot showing each transmitter location, with identifying call letters or file numbers, and indication of whether facility is operating or proposed. For vacant allotments, use the reference coordinates as the transmitter location.
(3) When necessary to show more detail, an additional allocation study utilizing a map with a larger scale to clearly show prohibited overlap will not occur.
(4) A scale of kilometers and properly labeled longitude and latitude lines, shown across

15. Attach as an Exhibit a 7.5 minute series U.S. Geological Survey topographic quadrangle map that shows clearly, legibly, and accurately, the location of the proposed transmitting antenna. This map must comply with the requirements set forth in Instruction V. The map must further clearly and legibly display the original printed contour lines and data as well as latitude and longitude markings, and must bear a scale of distance in kilometers.

Exhibit No. Tech.

16. Attach as an Exhibit *(name the source)* a map which shows clearly, legibly, and accurately, and with the original printed latitude and longitude markings and a scale of distance in kilometers:

Exhibit No. Tech.

(a) the proposed transmitter location, and the radials along which profile graphs have been prepared;

(b) the 3.16 mV/m and 1 mV/m predicted contours; and

(c) the legal boundaries of the principal community to be served.

17. Specify area in square kilometers (1 sq. mi. = 2.59 sq. km.) and population (latest census) within the predicted 1 mV/m contour.

Area 8,554 sq. km. Population 90,941 (1990 Census)

18. For an application involving an auxiliary facility only, attach as an Exhibit a map *(Sectional Aeronautical Chart or equivalent)* that shows clearly, legibly, and accurately, and with latitude and longitude markings and a scale of distance in kilometers:

Exhibit No. N/A

(a) the proposed auxiliary 1 mV/m contour; and

(b) the 1 mV/m contour of the licensed main facility for which the applied-for facility will be auxiliary. Also specify the file number of the license.

19. Terrain and coverage data *(to be calculated in accordance with 47 C.F.R. Section 73.313)*

Source of terrain data: *(check only one box below)*

[X] Linearly interpolated 30-second database [ ] 7.5 minute topographic map

(Source: NGDC)

[ ] Other *(briefly summarize)*

SECTION V-B – FM BROADCAST ENGINEERING DATA (Page 5)

Radial bearing (degrees True)	Height of radiation center above average elevation of radial from 3 to 16 km (meters)	Predicted Distances	
		To the 8.16 mV/m contour (kilometers)	To the 1 mV/m contour (kilometers)
153 *	154.1	33.1	52.7
0	155.9	33.3	53.0
45	159.7	33.7	53.4
90	143.1	31.8	51.3
135	146.3	32.2	51.7
180	160.4	33.8	53.5
225			

TECHNICAL EXHIBIT
AMENDMENT TO
APPLICATION FOR FM CONSTRUCTION PERMIT
SHARON A. MAYER
MILFORD, IOWA

February 26, 1992

CH 271C2 50 KW 150 M

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MILFORD, IOWA
CH 271C2 50 KW 150 M

Technical Narrative

The technical exhibit of which this narrative is part was prepared on behalf of Sharon A. Mayer in support of an amendment to an application (ARN-911004MG) for a new FM broadcast station to serve Milford, Iowa. The pending application specifies operation on channel 271C2 with effective radiated power of 50 kilowatts and antenna height above average terrain of 135 meters. By means of this amendment, the applicant proposes to change transmitter site and increase antenna height above average terrain to 150 meters. No other changes are proposed.

The proposal would not be subject to environmental processing in accordance with 47 CFR 1.1306. The Central Regional Office of the Federal Aviation Administration has been notified of the proposed construction. It is believed that the instant application conforms with all applicable rules and regulations of the Federal Communications Commission. Specifications for the proposed operation are included herein as Figure 1.

Proposed Transmitter Location

The proposed 6-bay FM antenna will be side-mounted on a uniform cross-section, guyed tower to be

constructed on the west side of State Route 86, 5.8 kilometers south of State Route 9 and 6.6 kilometers northwest of Milford, Iowa. The tower location is uniquely described by the following geographic coordinates, which were scaled from the "Okoboji, Iowa", U.S.G.S., 7.5 minute quadrangle map:

43° 22' 41" North Latitude

95° 11' 11" West Longitude.

A map showing the proposed transmitter location is included herein as Figure 2. A sketch showing the proposed antenna and supporting structure is included herein as Figure 3.

Allocation Study

As shown on Figure 6, the proposed transmitter site meets the Commission's separation requirements of 47 CFR 73.207 with respect to all known stations and allocations.

Coverage Contours

The predicted coverage contours were calculated in accordance with the provisions of 47 CFR 73.313. In accordance with current FCC practice, no consideration was given to terrain roughness correction factors.

The average terrain elevations from 3 to 16 kilometers (2 to 10 miles) were determined from the NGDC 30-second computer database. The standard eight radials evenly spaced at 45-degree intervals and a ninth radial

through Milford were used for determining the average elevations and the distances to coverage contours. The antenna radiation center heights above average terrain in the individual radial directions and the effective radiated power were used in conjunction with the F(50,50) curves of 47 CFR 73.333 (Figure 1) to determine distances to the 70 dBu (3.16 mV/m) and 60 dBu (1 mV/m) contours. Figure 4 is a tabulation of average elevations and distances to the predicted coverage contours. Figure 5 is a map showing the predicted coverage contours.

As the map in Figure 5 shows, the 70 dBu contour will cover all of Milford. The Milford city limits shown were obtained from a map contained in the 1980 census. The proposed facilities, therefore, comply with 47 CFR 73.315.

The "blanketing" contour of a 50-kilowatt FM station extends 2.8 kilometers. The applicant recognizes its responsibility to remedy complaints of blanketing interference as required by 47 CFR 73.318. FM station KUOO, Spirit Lake, Iowa, is the only FM or TV broadcast station located within 10 kilometers of the proposed transmitter site; therefore, the proposal is not expected to create objectionable interference. However, the applicant recognizes its responsibility to protect existing facilities in accordance with applicable rules.

Population and Area

The population to be served within the predicted 60 dBu contour was determined by a computer program which adds the populations of census districts whose centroids

lie within the contour. The 1990 census was employed. The area within the 60 dBu contour was determined by a computer algorithm using a root mean square method. The 60 dBu contour encompasses 8,554 square kilometers in which 90,941 persons reside.

Environmental Considerations

The proposed facilities were evaluated in terms of potential radiofrequency radiation exposure at ground level in accordance with OST Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation." Using the total of horizontally polarized and vertically polarized power, 100 kilowatts, and a six element FM transmitting antenna, the "worst-case" minimum height needed to meet the FCC specified guidelines, as determined from Appendix B, Table 1 of the Bulletin is 57.8 meters. As the lowest element of the antenna will be approximately 126 meters above ground level, the radiofrequency field exposure in the vicinity of the tower base will be well within the FCC

not believed to involve construction at a site location specified under 47 CFR 1.1307(a)(1)-(7), nor employ high intensity lighting in an area identified in 47 CFR 1.1307(a)(8), and the human exposure to radiofrequency radiation is predicted to be within the standards specified in 47 CFR 1.1307(b).

James D. Sadler

February 26, 1992

TECHNICAL EXHIBIT
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SHARON A. MAYER
MILFORD, IOWA
CH 271C2 50 KW 150 M

Technical Specifications

Channel	271C2
Frequency	102.1 MHz
Site coordinates	43° 22' 41" North Latitude
	95° 11' 11" West Longitude
Site elevation above mean sea level	460.2 m (1510 ft)
Average elevation above mean sea level of standard eight radials, 3-16 kilometers	443.8 m (1456 ft)
Overall height of proposed antenna structure with obstruction lighting	
Above ground	142.6 m (468 ft)
Above mean sea level	602.8 m (1978 ft)
Height of FM antenna radiation center	
Above ground	133.6 m (438 ft)
Above mean sea level	593.8 m (1948 ft)
Above average terrain	150 m (492 ft)
Transmitter	Make and Model to be determined
Maximum rated power output	25 kW

Technical Specifications
Milford, Iowa

Figure 1
Sheet 2 of 2

Transmission line	*Cablewave Systems, type HCC300-50J
Nominal diameter	7.62 cm (3.00 in)
Length	137.2 m (450 ft)
Efficiency (0.63 dB loss)	86.4%
Antenna	*Shively Labs, model 6810-6
Number of bays	6
Input power rating	40 kW
Polarization	Circular
Maximum power gain	
Horizontal polarization	3.28
Vertical polarization	3.28

Proposed Operation

Transmitter output power	17.64 kW
Transmission line loss	2.40 kW
Antenna input power	15.24 kW
Effective radiated power	
Circular polarization	50.0 kW

*Or equivalent

Figure 2

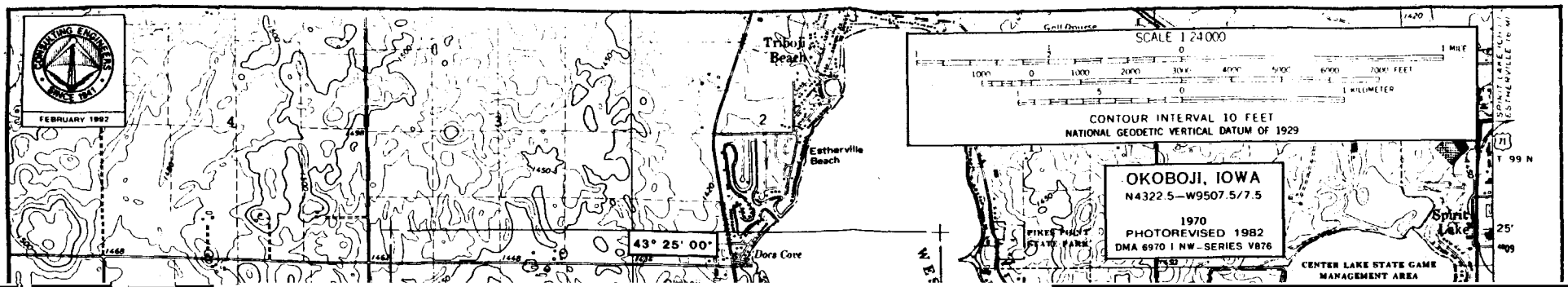
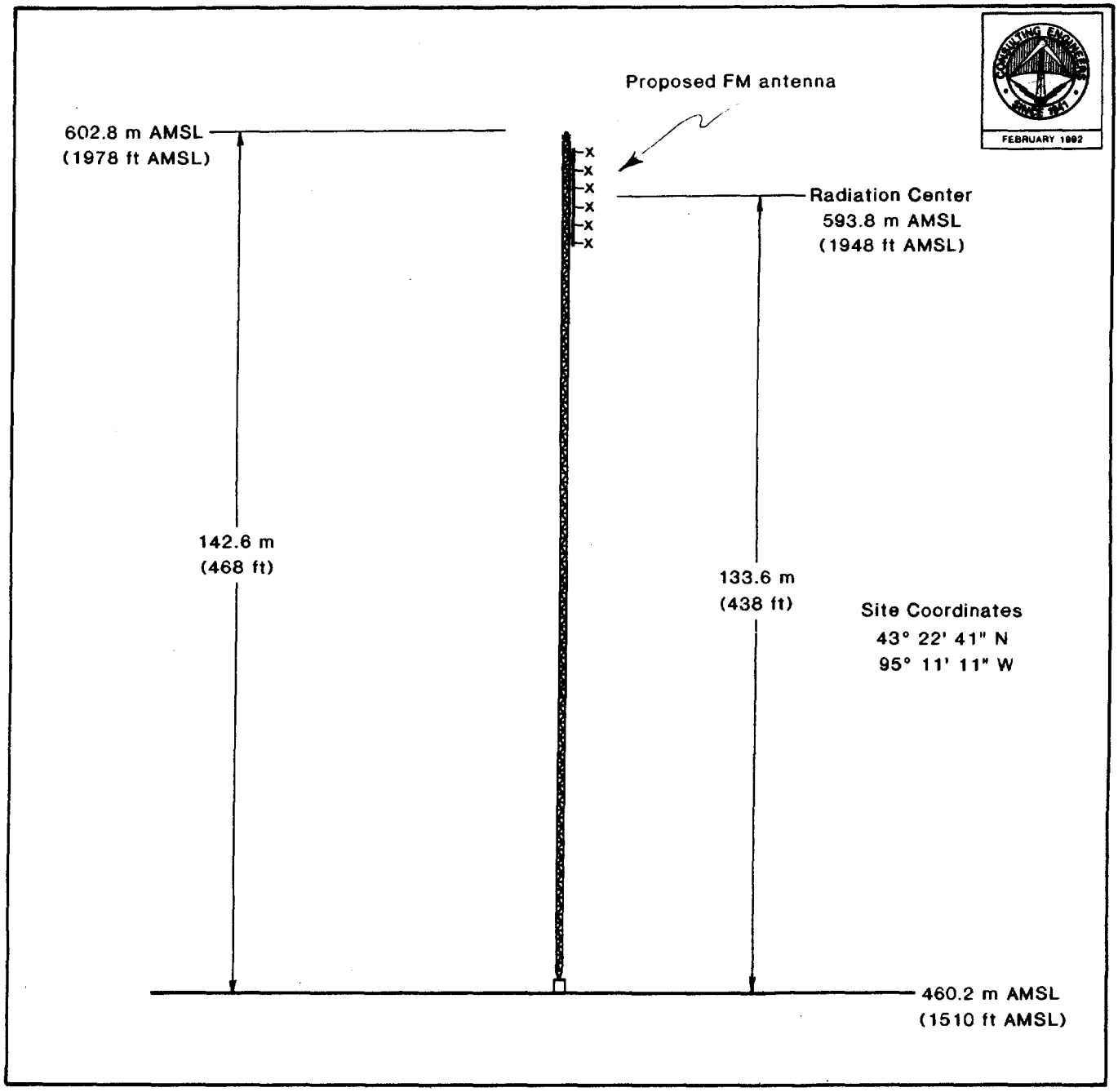

FEBRUARY 1982
Tripoli Beach
Estherville Beach
43° 25' 00"
Dora Cove
SCALE 1:24000
1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 0 1 KILOMETER
CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
OKOBOJI, IOWA
N4322.5—W9507.5/7.5
1970
PHOTOREVISED 1982
DMA 6970 I NW-SERIES V876
PIKES POINT STATE PARK
CENTER LAKE STATE GAME MANAGEMENT AREA
Spirit Lake
T 99 N
25'

Figure 3



PROPOSED ANTENNA AND SUPPORTING STRUCTURE

SHARON A. MAYER

MILFORD, IOWA

CH 271C2 50 KW 150 M

duTreil, Lundin & Rackley, Inc. Washington, D.C.

Figure 4

TECHNICAL EXHIBIT
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MILFORD, IOWA
CH 271C2 50 KW 150 M

Tabulation of Average Elevations
and Distances to Coverage Contours

Radial Bearing (deg. T.)	3-16 Kilometer Average Terrain Elevation (meters AMSL)	Antenna Height Above Average Terrain (meters)	Distance to Contour 70 dBu (km)	Distance to Contour 60 dBu (km)
0	437.9	155.9	33.3	53.0
45	434.1	159.7	33.7	53.4
90	450.7	143.1	31.8	51.3
135	447.5	146.3	32.2	51.7
153*	439.7	154.1	33.1	52.7
180	433.4	160.4	33.8	53.5
225	446.8	147.0	32.3	51.8
270	455.5	138.3	31.3	50.6
315	444.4	149.4	32.5	52.1
Average	443.8	150		

*Radial through Milford - not included in average.

Figure 5

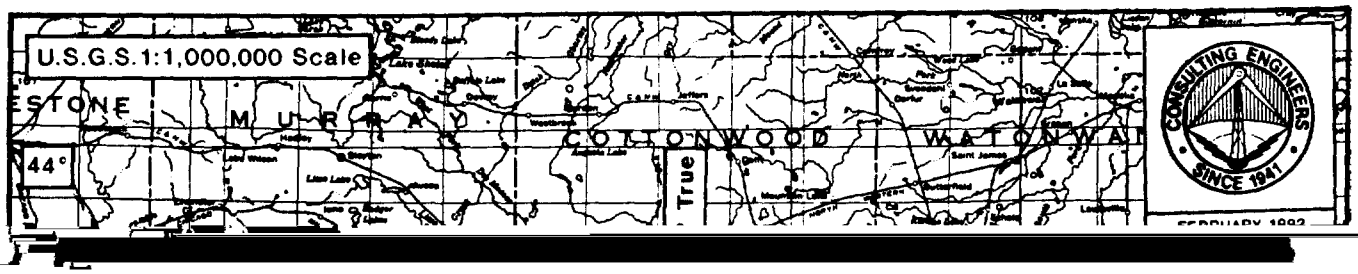
U.S.G.S.1:1,000,000 Scale
STONE
MURRAY
COTTONWOOD
WATONWAN
44°
True
CONSULTING ENGINEERS
SINCE 1941

Figure 6

TECHNICAL EXHIBIT
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SHARON A. MAYER
MILFORD, IOWA
CH 271C2 50 KW 150 M

Separation Study

Site coordinates: 43° 22' 41" North Latitude
95° 11' 11" West Longitude

Channel	Station	Separation (km) Actual	Required
268C1	KAYL-FM (CP), Storm Lake, IA	82.6	79
268C1	KAYL-FM (Lic), Storm Lake, IA	82.9	79
270C2	KTWB (CP), Sioux Falls, SD	143.7	130
271C1	KEEY-FM (Lic), St. Paul, MN	236.4	224
271C	KEEY-FM (CP), St. Paul, MN	249.0	249
272A	KIOW (Lic), Forest City, IA	126.6	106
272C1	Alloc., Onawa, IA	170.9	158

Sharon Mayer
Milford, Iowa
Form 301, Section IV-B
Exhibit No. 3 (Amended)

Integration Statement

The following information is supplied as a supplement to the information previously furnished in Exhibit No. 3, Integration Statement, to the application.

In the event she is awarded a construction permit, Mrs. Mayer will resign from or terminate any employment she may then have and make whatever other arrangements are necessary in her schedule to fulfill her fulltime work commitment to her proposed station.

SECTION VI – EQUAL EMPLOYMENT OPPORTUNITY PROGRAM

1. Does the applicant propose to employ five or more full-time employees? ☐ Yes ☒ No

If Yes, the applicant must include an EEO program called for in the separate Broadcast Equal Employment Opportunity Program Report (FCC 396-A).

SECTION VII – CERTIFICATIONS

1. Has or will the applicant comply with the public notice requirement of 47 C.F.R. Section 73.3580? ☒ Yes ☐ No

2. Has the applicant reasonable assurance, in good faith, that the site or structure proposed in Section V of this form, as the location of its transmitting antenna, will be available to the applicant for the applicant's intended purpose? ☒ Yes ☐ No

If No, attach as an Exhibit, a full explantion. Exhibit No. N/A

3. If reasonable assurance is not based on applicant's ownership of the proposed site or structure, applicant certifies that it has obtained such reasonable assurance by contacting the owner or person possessing control of the site or structure.

Name of Person Contacted: Bob Hanson Real Estate Agent

Telephone No. *(include area code)*: 712-338-4735

Person contacted: *(check one box below)*

☐ Owner ☒ Owner's Agent ☐ Other *(specify)*

The APPLICANT hereby waives any claim to the use of any particular frequency as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an

SECTION VII – CERTIFICATION (Page 5)

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND IMPRISONMENT. U.S. CODE, TITLE 18, SECTION 1001.

I certify that the statements in this application are true and correct to the best of my knowledge and belief, and are made in good faith.

Name of Applicant	Signature
Sharon A. Mayer	Sharon A. Mayer
Date	**Title**
2-27-92	Individual Sole Proprietor

FCC NOTICE TO INDIVIDUALS REQUIRED BY THE PRIVACY ACT AND THE PAPERWORK REDUCTION ACT

The solicitation of personal information requested in this application is authorized by the Communications Act of 1934, as amended. The principal purpose for which the information will be used is to determine if the benefit requested is consistent with the public interest. The staff, consisting variously of attorneys, analysts, engineers and applications examiners, will use the information to determine whether the application should be granted, denied, dismissed, or designated for hearing. If all the information is not provided, the application may be returned without action having been taken upon it or its processing may be delayed while a request is made to provide the missing information. Accordingly, every effort should be made to provide all necessary information. Your response is required to obtain the requested authority.

Public reporting burden for this collection of information is estimated to vary from 71 hours 45 minutes to 301 hours 30 minutes with an average of 118 hours 28 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Comments regarding this burden estimate or any other aspect of this